

Testi del Syllabus

Resp. Did.

Matricola: null

Anno offerta:	2025/2026
Insegnamento:	2020008 - MATHEMATICS 3
Corso di studio:	D720 - FOUNDATION COURSE IN ENGINEERING AND SCIENCE
Anno regolamento:	2025
CFU:	5
Settore:	NN
Anno corso:	1
Periodo:	Ciclo Annuale Unico



Testi in italiano

Lingua insegnamento	English
Contenuti	Part 1: Set theory [14h]. Set theory: operations with sets (union, intersection, set difference, cartesian product). Boolean operations and basics of logic. Cardinality of sets; basic combinatorics. Part 2: Operations with functions [12h]. Composition of functions. Inverse function, injectivity and surjectivity. Elementary functions and their inverses. Transformations and change of scales. Part 3: Basic notions of calculus [14h]. The concept of limit (examples with polynomial and rational functions). The concept of continuity. The concept of tangent line; derivatives
Testi di riferimento	“Contemporary Mathematics”, OpenStax, available online: https://openstax.org/details/books/contemporary-mathematics “Precalculus”, OpenStax, available online: https://openstax.org/details/books/precalculus-2e
Obiettivi formativi	The objective of this course is to introduce basic concepts of calculus. The main focus is on basic set theory and on basic operations with functions. Some concepts are introduced only in an informal way, to prepare for their rigorous treatment in university courses. Students will learn how to perform basic operations with sets and simple functions
Prerequisiti	None
Metodi didattici	Lectures
Altre informazioni	--
Modalità di verifica dell'apprendimento	Exam: The assessment of learning is expressed on a thirty-point scale and will be carried out through a written test and an oral exam. A minimum score of 18/30 is required to pass

Obiettivi per lo sviluppo sostenibile

Codice	Descrizione
 Testi in inglese	English
	Part 1: Set theory [14h]. Set theory: operations with sets (union, intersection, set difference, cartesian product). Boolean operations and basics of logic. Cardinality of sets; basic combinatorics. Part 2: Operations with functions [12h]. Composition of functions. Inverse function, injectivity and surjectivity. Elementary functions and their inverses. Transformations and change of scales. Part 3: Basic notions of calculus [14h]. The concept of limit (examples with polynomial and rational functions). The concept of continuity. The concept of tangent line; derivatives
	“Contemporary Mathematics”, OpenStax, available online: https://openstax.org/details/books/contemporary-mathematics “Precalculus”, OpenStax, available online: https://openstax.org/details/books/precalculus-2e
	The objective of this course is to introduce basic concepts of calculus. The main focus is on basic set theory and on basic operations with functions. Some concepts are introduced only in an informal way, to prepare for their rigorous treatment in university courses. Students will learn how to perform basic operations with sets and simple functions
	None
	Lectures
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	Exam: The assessment of learning is expressed on a thirty-point scale and will be carried out through a written test and an oral exam. A minimum score of 18/30 is required to pass

Obiettivi per lo sviluppo sostenibile

Codice	Descrizione
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